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ABSTRACT

This volume outlines the requirements and content of a second-year course in allied health occupations education that is designed to provide students with a practical understanding of the work done by the radiologic team and to enable them to acquire some basic skills used in the X-ray department. Addressed in the individual units of the course are the following topics: the qualifications necessary for radiological technologists, anatomy and physiology, imagery equipment, specialized imagery equipment, radiographic examinations, the radiograph, and communication. The first part of the volume sets forth standards pertaining to the primary objective of the course; its content; its target audience, duration, and prerequisites; and course requirements. The bulk of the guide comprises a series of unit outlines in which behavioral objectives are presented together with an implementation plan and a list of lesson assignments. Concluding the volume are a sample training site plan and a sample student evaluation checklist. (MN)

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Middletown Public Schools

CURRICULUM STANDARDS

ALLIED HEALTH OCCUPATIONS II
RADIOLOGIC TECHNOLOGIST AIDE COMPONENT
STUDENT LEARNING GUIDE

U.S. DEPARTMENT OF EDUCATION
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Learning Packet Guide - Radiologic Technologist Aide

The radiologic technologist aide gives each patient the best possible care while assisting with X-ray procedures. This care includes interaction with the patient and positioning procedures. This component introduces the student to the work of the hospital radiology team, imaging equipment, factors of the life cycle and quality of a radiograph, and various radiographic examinations used in diagnosing diseases.

The radiology department supervisor will identify and list the duties which the student will perform while under supervision in the clinical site.

This learning packet is to be used in conjunction with:

Text: 1.) Gurley, LaVerne Tolley and Gallaway, William J., Introduction to Radiologic Technology, Multi-Media Publishing, Inc.
2.) Memmler/Wood, The Human Body in Health and Disease, Lippincott
3.) Morrison, Cornett, Tether, Gratz, Human Psysiology, Holt, Rinehart, Winston
4.) Library and other resource books:

Medical Terminology

Film Strips:

Evaluation: Observation of laboratory techniques by clinical area supervisors and instructor
Unit tests
Mid-term and final examinations

This course will provide approximately 50 classes of Allied Health Occupations II, Core Curriculum, before beginning study on Radiologic Technologist Aide, 15 classes of instruction on Introduction to Radiologic Technology (first semester), and approximately 60 hours of clinical experience in the X-ray department of Middlesex Memorial Hospital plus approximately 30 classes in the classroom during the 2nd semester.

Course Description

Course Title: Allied Health Occupations II - Radiologic Technologist Aide

Objective: To provide the student with a practical study of the work done by the radiologic team and to acquire some basic skills used in the X-ray department.

Designed for: A 12th grade student who wishes to examine possibilities of employment and further education in the radiological field.

Content: Topics covered include:

1. Becoming a Radiological Technologist
   (Team - Ethics -- Organizations)
2. Anatomy and Physiology - Sketetal System, Digestive System
3. Imagery Equipment (Film screen, fluroscopy)
4. Specialized Imagery Equipment (Tomography,nuclear, ultrasound)
5. Radiographic Examinations (Aids to diagnosing disease and injury)
   (Patient Preparation & Contrast Media)
6. The Radiograph (Factors affecting quality)
7. Communication

Duration: Two semesters

Prerequisite: Allied Health I

Course requirements:
A. Students will bring required materials to class
B. Homework assignments, quizzes, tests, examinations
C. Students must wear uniform provided by the school for clinical experience

Note: The student will receive ½ credit for the 1st semester of Allied Health II. One full credit will be awarded for the 2nd semester's work which includes approximately 50-60 hours of clinical experience at Middlesex Memorial Hospital and/or other clinical site.

ALLIED HEALTH OCCUPATIONS II*

CURRICULUM STANDARDS

Unit I BECOMING A RADIOLOGIC TECHNOLOGIST

A. Introduction to Education of Radiography

The student will

1. Discuss the work and place of radiologic technician in Allied Health
2. Discuss the components of radiographic education
   a.) Basic curriculum
   b.) Clinical setting
3. List five good study habits
4. State personal adjustments required to enter radiographic education
   a.) Physiological needs
   b.) Psychological needs
5. Define:
   perception, attention
6. Identify memory skills
   improved listening skills
   radiographic nomenclature
7. List professional qualities of a radiologic technologist
   a.) kindness
   b.) alertness
   c.) seriousness (patient handling)
   d.) willing to study
8. State the duties of the radiological team
   a.) X-ray technician
   b.) radiographer, person who excels in art and science of making radiographs
   c.) quality control technologist
   d.) radiologist

(Cont'd.)

Radiologic Component

IMPLEMENTATION PLAN

Text: Gurley, LaVerne Tolley, PhD, RT, and Callaway, William J., BA, RT,
Introduction to Radiologic Technology
Multi-Media Publishing, Inc.
Part I - Pages 1-43

Terminology:

Review medical abbreviations

Add:

CHF	MI	URI
CVA	PID	UTI
FUO	R/O	
HH	TIA	

Radiographic nomenclature, Pg. 50, 51, 52

Date due_____

CURRICULUM STANDARDS (Cont'd.)

B. Professional Aspects of Radiology

The student will

1. State what a code of ethics includes:
   a.) radiation safety
   b.) public education
2. Identify complex economic issues involved in the operation of an X-ray department
   a.) Radiology-most expensive hospital department
3. Identify 2 Radiologic professional organizations and professional periodicals
   a.) American Registry of Radiologic Techologists (Certifying Agent)
   b.) American Society of Radiologic Technologists (Voluntary organization responsible for professional development and continued education)

Unit II ANATOMY and PHYSIOLOGY

A. The Skeletal System

The student will

1. Describe bone structure and bone development
2. State the 5 main functions of bones
3. List and describe the bones of the head
4. List and describe the bones of the trunk and spinal column
5. Name the bones of the upper and lower extremities
6. List 4 landmarks of bones
7. Define: fontanels, foramina, fossae, grooves (bone)
8. Describe one disorders
   a.) osteomyelitis c.) Paget's Disease
   b.) Pott's Disease d.) rickets
   e.) fractures
   simple impacted
   compound comminuted
   greenstick spiral

IMPLEMENTATION PLAN

Using radiographic journals in hospital library, write a 1-2 page review on an article concerning a matter of professionalism (work conditions, etc.)

Date due _____

Texts:

Memmler/Wood, The Human Body in Health and Disease, Lippincott

Morrison, Cornett, Tether, Gratz, Human Physiology, Holt, Winston

Do vocabulary worksheet

Write 1 page reports on the 4 bone disorders in #8
osteomyelitis Pott's Disease
Paget's disease rickets

Date due _____

Unit II - A (Cont'd.)

9. Name and describe 3 kinds of joints
10. List 5 kinds of joint movement
11. Describe disorders of joints
    a.) dislocations
    b.) sprains
    c.) arthritis
    d.) gout
    e.) backache

B. The Digestive System

The student will

1. Describe the organs of ditestion, name their parts and state their functions.

    a.) stomach
    b.) small intestine
    c.) large intestine
    d.) liver
    e.) gallbladder
    f.) pancreas

2. State some disorders of the above organs and relate them to X-ray need

    a.) gastritis
    b.) enteritis
    c.) diarrhea-dysentery
    d.) constipation
    e.) cancer

Unit III - IMAGERY EQUIPMENT

A. X-ray tube

The student will

1. Describe and state function of X-ray tube
    a.) Glass bulb with positive and negative electrodes
    b.) Determines quality of image

2. Define: anode (+)
   cathode (-)
   filament that gives off an elcctron cloud when heated

Text: Gurley & Calloway
Introduction to Radiologic Technology

Unit III.

B. The Film-Screen System

The student will

1. Describe the Film-screen system
2. Define: phosphors
3. Explain patient safety - dosages as low as possible
4. Describe the X-ray film

C. Fluoroscopy

The student will

1. Define Fluorscopy:
   a) View of living and functioning interior of body
   b) No wait - immediately displayed
2. Describe the process of Fluorscopy
   a) X-ray tube below table
   b) Radiation passes through table top & patient, strikes fluorescent screen, producing image of body part
   c) Provides cross-sectional views of the body
   d) Define: image intensifier
   e) Describe operation of fluoroscopy - tasks of radiologist & radiographer

Unit IV SPECIAL IMAGING EQUIPMENT

A. Computed Tomography

The student will

1. Describe how computed tomography takes place
   a) X-ray tube and radiation sensor rotate around the table

Dates due

Text: Gurley & Callaway, Intro. to Radiologic Technology

Pages 53
Using library resources, write a 1-2 page report about -
a) the X-ray tube
b) the film-screen system .
c) Fluoroscopy -
pg. 54 Use books and radiographic journals
Include information about the newest equipment

Write approx. 1 page stating the difference between tomography and computed tomography.

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Unit IV. B. Digital Imaging Equipment

The student will

1. State the advantages of digital imagery equipment
   a) Has the ability to eliminate unwanted images on the screen
   b) Images can be stored by computer on magnetic tape and later transferred to film

Text:

Gurley & Callaway, Intro to Radiologic Technology

Write out one pg. explanation of what Digital Imagery equipment is - State its advantages and disadvantages

C. Nuclear Medicine

The student will

1. Describe how radioactive materials are used to produce images of the body
2. Define: nuclides

Using library resources, write a 2-4 pg. paper on nuclear medicine

D. Portable Radiography & Fluoroscopy

The student will

1. State the source of power from which portable units operate
2. List the limitations of portable X-rays
3. Name two advantages of its use
4. Explain dangers involved

E. Tomography

The student will

1. Differenciate between tomography and computed tomography
2. Describe the process of tomagraphy
3. State the main advantage of tomography
   a) Allows the evaluation of body parts that are difficult to visualize because of overlying structures

Text: 55-57
Paper on ultrasonography - (1-2pg)

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CURRICULUM STANDARDS	IMPLEMENTATION PLAN
Unit IV. F. Ultrasonography The student will 1. Describe how ultrasonography obtains sectional images 2. List areas of the body in which ultrasound is most useful as a diagnostic tool	Text: Gurley & Callaway, Intro. to Radiologic Technology Read pgs. 59 - 60 Using library resources, research and write out 1-2 pages describing the properties of iodine and barium - why and how they are used in radiography. Date due:_____
Unit V. RADIOLOGIC EXAMINATIONS A. Patient Preparation The student will 1. State reasons for external preparation a) Removal of clothing, jewelry, dentures 2. State reasons for internal preparation a) Cleansing enemas before x-ray exams b) Tablets taken p.o. - Gallbladder exam	
B. Contrast Media The student will 1. Name 3 general types of contrast media used in radiography a) air b) iodine based c) barium based 2. Describe the properties of iodine as pertains to x-rays a) High atomic number b) X-rays do not readily pass through iodine 3. Describe the qualities of barium a) X-rays do not readily pass through barium b) Barium sulfate is inert / cannot be absorbed by the body; therefore, ideal for gastrointestinal studies	

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Unit V. B. 4. State the use of air as a contrast agent
a) Easily penetrated by X-rays
b) Provides contrast between lung tissue, vessel markings and air sacs
c) May be used with a solution of barium sulfate in colon studies providing a double contrast

Text: Gurley & Callaway, Intro to Radiologic Technology

Unit VI. RADIOGRAPHIC STUDIES

A. Skull and Headwork

The student will

1. List individual examinations performed for skull bones:
   - sella turica
   - facial bones
   - nasal bones
   - mandible
   - maxilla
   - mastoids
   - internal acoustic meatus
   - orbits
   - eyes
   - sinuses
   - temporomandibular joints

Date due_____

2. State reasons for required multiple views
3. Describe a head unit
4. Explain why these studies (1.a) are best done on a head unit.

Text pg. 61 and 62.

1-2 pg. paper on Chest X-rays.

B. Thoracic Cavity

the student will

1. List the parts included in the thoracic cavity
2. Explain why the chest x-ray is the most frequently repeated examination
3. List 4 conditions which would require thoracic studies
   a) evaluate fluid in lungs
   b) overexpansion
   c) colapsed lung
   d) tumors
   e) heart enlargement
   f) fractures of ribs, sternum and sternoclavicular joints

Write a 1 page report on colasped lung.

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CURRICULUM STANDARDS

IMPLEMENTATION PLAN

Unit VI. C. Extremities

The student will

1. List parts of the upper extremities frequently x-rayed
   a) fingers, hand, wrist, forearm, elbow, humerus, shoulder, clavicle, acromioclavicular joints, scapula

2. List parts of the lower extremities x-rayed
   a) toes, foot, heel, ankle, lower leg, knee, patella, femur, hip, pelvis, pubic rami

3. Explain special care for handling of broken bones

4. List 4 reasons for X-ray exams of bones of extremities
   a) fractures
   b) arthritis
   c) osteoporosis
   d) cancerous tumors

Text: Gurley & Calloway, Introduction to Radiologic Technology

Human Body - pgs. 91-106, 113-114

Do work sheets #1, 2 and 3

D. Spine

The student will

1. List parts included under "spine" category
   a) cervical spine
   b) thoracic (dorsal) spine
   c) lumbar spine
   d) sacroilliac joints
   e) sacrum
   f) coccyx

2. State 2 reasons for extremely careful handling of patients with spinal injuries
   a) prevention of injury to nerves
   b) spinal injuries - very painful

3. State 3 reasons for doing spinal studies
   a) evaluating severe trauma
   b) evaluate extent of arthritis.
   c) abnormal curvatures
   d) muscle spasms
   e) slipped vertebrae

View First Aid film for handling spinal injuries.

Using library resources, write 1-2 page report on "slipped disc."

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Unit VI. E. Abdomen

The student will

1. State uses of x-ray studies not requiring contrast agents and fluorscopy
   a) presence of foreign objects
   b) calcifications
   c) distribution of air in the intestines
   d) the size, shape and location of major organs
   e) bony and soft tissue damage
   f) evaluation of individual organs

2. Describe an Intravenous Pyelogram (IVP)
   a) Involves use of iodinated contrast agent injected into blood stream
   b) Uses: Visualize stones in urinary system
      Evaluate kidney function

3. Explain the preparation necessary for Gall bladder studies

Unit VII. Fluorscopic Examinations

A. Esophagram

The student will

1. Define: esophagram
2. Explain the procedure for taking an esophagram

B. Upper G.I. Series

The student will

1. List reasons for performing G.I. studies
   a) investigate tumors
   b) inflammation
   c) malabsorption of nutrients

2. Describe the procedure

C. Barium Enema

The student will

1. State reasons for doing this procedure
   a) indication of tumors
   b) bowel obstructions
   c) diverticula d) inflammation

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Text: Gurley & Callaway, Intro. to Radiologic Technology

CURRICULUM STANDARDS	IMPLEMENTATION PLAN
Unit VII. C. 2. Explain 2 important factors about this procedure (Barium enema) a) Radiologist and radiographer need to work quickly b) Barium solution causes cramping and discomfort	Text: Gurley & Callaway, Intro. to Radiologic Technology
D. Urinary System Studies the student will 1. Define and describe: a) cystogram b) a voiding cystourethrogram	I.V.P.
E. Cholangiogram The student will 1. Define and describe cholangiogram	Text: 62-64 1-2 pg. paper explaining a "cholangiogram."
Unit VIII. SPECIAL X-RAY PROCEDURES A. Arteriogram The student will 1. Define: arteriogram 2. Describe the procedure	1-2 pages defining arteriogram and describing the procedure
B. Arthrogram The student will 1. Define: arthrogram 2. Describe the procedure	
C. Bronchogram The student will 1. Define: bronchogram 2. Describe the procedure 3. Explain why this exam is distressful a) airways in lungs are filled with contrast media	Make labeled drawing of lungs in which airways are filled c contrast media - compare with a drawing of normal healthy lungs.

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CURRICULUM STANDARDS	IMPLEMENTATION PLAN
Unit VIII. D. Hysterosalpingogram The student will 1. Define: hysterosalpingogram X-ray examination of uterus and fallopian tubes 2. Explain how procedure is done a) oil-based medium b)fluoroscopy and conventional radiographs	Text: Gurley & Callaway, Intro, to Radiologic Technology
E. Lymphangiogram the student will 1. Define: lymphangiogram a)used to evaluate lymph nodes and vessels 2. Explain procedure: a) radiographs are taken as the medium moves through the system	Pg. 64 1-2 pgs. on doing a lymphangiogram.
F. Mammogram the student will 1. Define mammogram - X-ray studies of breast 2. Explain procedure a) High contrast X-ray film needed b) specially designed cassettes needed 3. Define: Xeroradiography a) procedure using electrically charged plates instead of film to make breast images	
G. Myelogram The student will 1. Define myelogram Examination of subarachnoid space of spinal cord 2. Explain procedure: a) Removal of some spinal fluid b) Iodine based contrast agent injected into space c) Fluoroscopy used to guide flow of contrast agent and to obtain radiographs	report on myelograms. Try to illustrate with duplicated pictures from library resources.

CURRICULUM STANDARDS	IMPLEMENTATION PLAN
Unit VIII. H. Sialogram	
The student will	Text: Gurly and Callaway, Introduction to Radiologic Technology
1. Define : sialogram Study of salivary glands 2. Explain procedure: a) injection of contrast agent b) both fluoroscopy and routine radiography of mandible	
I. Tomography	
The student will	
1. Define tomography a) Body section radiography b) Puts x-ray tube and film in motion during exposure to blur structures above and below part of interest c) Can be used as part of another test (IVP or IVC) d) Common sites: common bile duct internal ear structure	Review tomography
J. Venogram	
the student will	Compare the venogram procedure with the arteriogram procedure
1. Define venogram : a study used to evaluate veins in a particular area of the body 2. Explain the procedure: a) Contrast medium injected into body and radiographs are made	Film:
Unit IX. THE RADIOGRAPH	
A. Life Cycle	
The student will	
1. Become acquainted with the use of radiologic studies as a frequently chosen course of action for obtaining a diagnosis	

Unit IX.

A. 2. Observe the duties of the Technologist
a) Greets patient
b) Positions patient
c) Determines appropriate exposure factors
d) Takes x-rays

3. Define latent image
a) contained in the emulsion of the X-ray film

4. Explain automatic film processor
a) film goes into solution called developer
b) developer causes film to swell so that chemicals can act on image - chemicals cause crystals in the film that were struck by X-rays to become black (black regions)
c) film goes to fixer solution fixer acts on unexposed crystals and removes them from film (transparent regions)
d) film moves to wash water to remove any remaining chemicals
e) film is dried
f) examined by radiographer or Quality Control Technologist - checks proper positioning and exposure
g) examined by radiologist - to be interpreted and a diagnosis possibly made
h) consult with physician
i) part of patient's permanent record with typewritten copy of radiologist's report
j) kept in file for several years to compare with more recent ones

5. discarded old films may be sold, treated to remove silver and then reused.

B. Factors affecting Radiographic Quality

The student will

1. State the 4 factors affecting the quality of a radiograph and define each:

) density - most important
logarithm of opacity
1. ratio of the amount of light incident on the film to the amount transmitted by the

Text: Gurley & Callaway, Introduction to Radiologic Technology

pg. 69

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Unit IX B.

2. A measure of black metalic silver on the film
   b) detail
   c) contrast
   d) distortion or uneven magnification

Text: Gurley & Callaway, Introduction to Radiologic Technology

2. Define: density, remnant radiation, contrast, distortion, kilovoltage

3. List 5 factors affecting radiographic density

   a) subject thickness and density
   b) kilovoltage
   c) milliamperage
   d) time
   e) distance
   f) film
   g) intensifying screens
   h) fog
   i) cones & collimators
   j) processing
   k) grids
   l) filters

4. List 5 factors affecting contrast

   a) subject contrast
   b) kilovoltage
   c) contrast media
   d) type of film
   e) intensifying screens
   f) fog
   g) grids & beam-limiting devices
   h) film processing
   i) filters
   j) X-ray beam angle

5. State 2 factors contributing to magnification and distortion
   a) beam alignment
   b) object-film distance
   c) focus-film distance

6. Explain beam alignment, object-film distance and focus-film distance

Define:

remnant, contrast, radiation, kilovoltage, density

Do worksheets:
factors affecting density
" " contrast

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(Cont'd.) CURRICULUM STANDARDS

IMPLEMENTATION PLAN

Unit IX B 7. State 5 factors affecting radiographic detail

a.) density
b.) contrast
c.) fog
d.) processing
e.) patient motion
f.) focal spot size
g.) object-film distance
h.) focus-object distance
i.) film
j.) screens
screen-film contact

Unit X PRINCIPLES OF COMMUNICATION

A. Communication

- Noonan, Coping, pg. 111-139

The student will

1. Explain what is meant by communication
   a.) Interchange of thoughts, opinions or information by speech, writing or signs
2. Name 3 factors which influence communication
   a.) sender, b.) message, c.) receiver
3. State the difference between a perception and an opinion
4. Give 3 examples of non-verbal communication
   a.) posture
   b.) gait
   c.) gestures
   d.) attitude
   e.) facial expression
5. Explain how non-verbal communication is related to patient care

B. Psychological Needs

Noonan, Coping With Illness, pp. 91-99

The student will

1. List the 5 categories of human needs
   a.) biological
   b.) safety
   c.) sexual
   d.) sensory
   e.) motor activity
   f.) psychological, mental
2. Discuss at least 3 of the categories of human needs that are threatened by hospitalization
   a.) O_2 - difficult breathing - anxiety
   b.) Ice chips as substitute for water
   c.) Surgery - worry - body whole

Unit X · B -

2. (Cont'd.)

d.) safety - bed - wires - floor
e.) sex - can't have in hospital - all activities curtailed

3. List 5 psychological needs

a.) order and meaning
b.) adequacy
c.) security
d.) approval
e.) self-esteem
f.) love
g.) self-growth

Coping, pg. 91-99

Allied Health Occupations II - Radiographic Technologist Aide

Assignments

Text: Gurley, LaVerne Tolley, PhD, RT, and Callaway, William J., BA, RT, Introduction to Radiographic Technology, Multi-Media Publishing, Inc.

Date due:

1. Read text: pg. 1-43
   In guidance department -investigate becoming a member of a radiologic team.
   Write 2-3 pg. paper, giving -

   levels of proficieny
   schooling needed - where? how much?
   time needed to prepare
   ? of internships
   salaries

2. Memorize: prefixes, roots & suffixes, pg. 47 & 48

   Do work sheets

   Review medical abbreviations
   Add:

CHF	MI	URI
CVA	PID	UTI
FUO	R/O	
HH	TIA	

   Radiographic nomenclature, pg. 50-52

3. Using Radiographic journals, write 1-2 pg. review on an article concerning a matter of professionalism (work conditions, etc.)

4. Read: Human Body. pg. 91-106
   Write put questions 1-10, 20-22, pg. 115
   Cont. next column

4. Cont.
   Read Human Physiology, pg. 55-77
   Write out statements and questions, Group A & B - pg. 78

5. Write 1 pg. reports on the 4 bone disorders in # 8

   osteomyelytis — Pott's Disease
   Paget's Disease — rickets

6. Read: Human Body, pg. 197-211
   Write: Questions 1 & 4-16, pg. 213

   Read: Human Physiology, pg. 229-236, 238-254

   Write out vocab. review, pg. 236 & 254
   " " in complete statements: -

   Group A, #1,5,6,7, 10- pg.237
   " B, all, pg. 237
   " A & B - pg. 255

7. Read text: Radiologic , 53-57

   Write out definitions:

anode	cathode	filament
electron	nuclides	

8. Using library resources; wirte a 1-2 pg. report about
   a) the X-ray tube
   b) the film screen system
   c) fluoroscopy

   Text: pg. 53 &54
   Use books and journals
   Include information about the newest equipment

9. Write approx. 1 pg. stating the difference between tomography and computed tomography.

10. Write out an explanation (one pg.) explaining what Digital Imagery equipment is - state its advantages and disadvantages

11. Using library resources; write 2-4 pg. paper on nuclear medicine .
    Cover: a) discovery
    b) early uses
    c) today's uses
    d) plans for future

12. Read text: 55-57

13. Using library resources, write a one-two pg. paper on ultrasonography -

    include discovery and growth of use

14. Text: Read: 59 & 60

    Using library resources; write 1-2 pgs. describing the properties of iodine and barium - why and how they are used in radiography.

15. Memorize list of skull bones.

16. Text: Read: pg. 61 & 62

    Using library resources; write 1-2 pg. paper on Chest X-rays.

    Include how originally taken
    why it is the most frequently repeated exam
    Do doctors use this exam more or less now than 20 yrs. ago - why?

17. Write a 1 pg. report on colasped lung-
    Include: How does this condition come about?
    What do X-rays show?
    What kind of care & treatment does a person with a colasped lung need?

18. Read: Human Body : pg. 91-106
    113-114

    Memorize the bones of the upper & lower extremities
    Do questions, 1-10, pg. 115
    Work sheets: 1, 2 & 3

    Write out explanation -1 pg.each
    arthritis
    osteoporosis
    Describe conditions, symptoms
    What good does it do to take X-rays?
    What is the accepted R_x for these conditions?

Date Due

20. Memorize the parts of the spine.
Using library resources, write 1-2 pg. report on "slipped disc."
What are some causes?
How does this condition appear on the X-ray?
Give pros and cons of surgical and non-surgical R_x.

21. Write out a one pg. description of an I.V.P.

22. Read Text: 62 - 64

Using library resources, write 1 pg. paper explaining a "cholangiogram."

23. Using library resources, write one pg. defining arteriogram and describing the procedure.

24. Make labeled drawing of lungs in which airways are filled with contrast media -
Compare with a drawing of normal, healthy lungs

25. Read pg. 64 in Text.
Using library resources, write one page on doing a lymphangiogram.
Give reasons for doing -
Explain procedure.

26. Write one page report on myelograms.
Try to illustrate with duplicated pictures from library resources.

27. Review tomography - Assign # 9

28. Compare the venogram procedure with the arteriogram procedure in a one pg. report - using library resources.

29. Read pg. 69 - Text

30. Write out definitions:
Unit IX: B. ".

31. Write out definitions or explanations of factors in B: # 3, 4, 5, 6, 7.

32. Define: (Write out)

remant radiation density
contrast kilovoltage

33. Read Coping, pg. 111-139

34. Read Coping, pg. 91-99

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What they are and how to use them.

Training plans are methods by which the instructor correlates the classroom and clinical experiences. The time required for a student to become competent in each task may vary, but average times should be provided for each task.

A time sheet must be completed by the student at the end of each day. Each student must record the skills learned/utilized and the time spent on each skill. This sheet is to be kept at the student's training site and, when completed, turned in to the instructor.

The on-site training plan should be completed by the on-site trainer or instructor and must be kept at the training site. When a student has successfully completed each competency, the on-site trainer will sign the student off, verifying their performance. The student will be responsible for making sure that they have completed each task and that they have the on-site trainer's signature. A copy of the completed training plans will be given to the student at the end of the program as a reference and guide.

Student: _____

Comments:

The above signatures certify that _____

has successfully performed the skills listed under the direct supervision of the designated on-site trainer and/or the instructor of record.

Date of completion of entire training plan: _____

TRAINING PLAN

Student _____ Date _____

Course Title _____

Training Job Title _____

Training Site	School
Facility/Office _____	Name _____
Address _____	Administrator _____
_____	Phone _____
Phone _____	Parent's Name _____
Contact Person _____	Emer. Phone No. _____
Title _____	Teacher's Name _____
Phone _____	Phone _____

Student's Training site hours from _____ AM/PM to _____ AM/PM

Department/Unit/Ward _____

Sub-department _____

The tasks listed are those which the student is expected to be able to perform to the satisfaction of the on-site trainer/staff.

_____ _____
On-site Trainer Student

_____ _____
Instructor Date

R

RADIOLOGIC TECHNOLOGIST AIDE

Middletown High School - Middlesex Memorial Hospital

tudent _____

ASKS	Training Time Spent	Date Competency Level Achieved	On-site Trainer Signature
Communication Skills - Telephone Communications			
Relays messages accurately Transfers Calls			
- Greets patients Checks patient's I.D. Directs patients to appropriate area and personnel			
lerical Skills Prepares and maintains patient files			
Files and logs X-ray requests			
Maintains operating files of regulations and instructions and/or policies			
Handling Patients - Preparation/Positioning Arranges, attaches and adjusts immobilization and/or support devices			
sandbags binders angleboards			

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Tasks	Training Time Spent	Date Competency Level Achieved	On-site Trainer Signature
Applies and adjusts position of lead apron shield Transports and moves patients using appropriate body mechanics and safety precautions Attends to patient's modesty			
Places patients in correct radiographic positions			
Equipment Selection/Set-Up Selects proper size film unit Loads and unloads film units			
Prepares trays for special examinations			
Selects necessary and proper immobilization devices			
Assists with administration of appropriate chemical mixes (i.e., barium salts) to patient under direction of radiologist			
ssists with the following studies: Arteriograms Myelograms			

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Student _____

Tasks	Training Time Spent	Date Competency Level Achieved	On-site Trainer Signature
Arthrograms Tomograms G.I. Series			
Adjusts machine settings for examinations under supervision of technologist			
Assists with operation of mobile X- ray equipment to appropriate area:			
surgery emergency room bedside			
FILM PROCESSING Prepares and replenishes processing solutions			
Verifies and adjusts temperatores of processing solutions Accurately inserts and removes films from holders			
Accurately processes film Accurately uses automatic developing machines			
Post Examination Procedure Removes and places exposed films in appropriate area for processing			

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Tasks	Training Time Spent	Date Competency Level Achieved	On-site Trainer Signature
Cleans and maintains X-ray equipment			
Washes and sterilizes treatment facilities			
Miscellaneous Duties			
Marks identification symbols on films			
Mounts films in viewing apparatus			
Inventories, orders and replenishes supplies			
Maintains film hangers			
Maintains cassettes			